SONY®

TRINITRON® COLOR TV

KV-20XBR/25XBR
(CABLE COMPATIBLE TV)

OPERATING INSTRUCTIONS

Welcome to the advanced world of Sony TV. For the best results and the utmost satisfaction from your new set, please read this manual thoroughly and retain it for future reference.
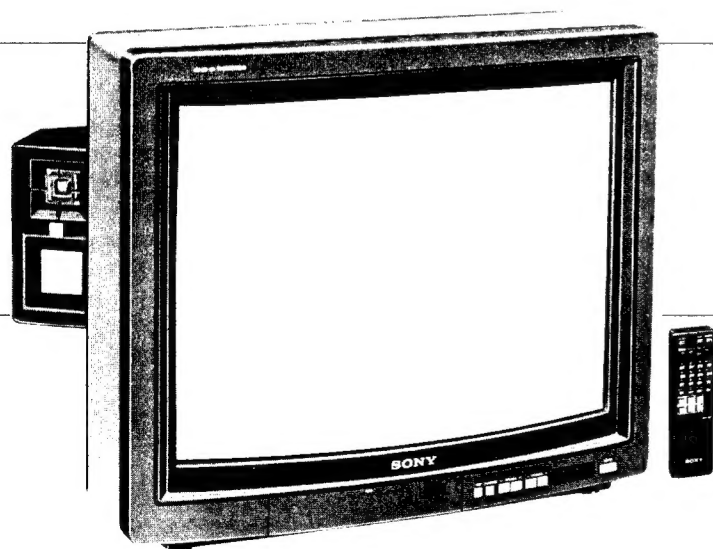
OWNER'S RECORD

The model and serial numbers are located at the rear. Record these numbers in the spaces provided below. Refer to them whenever you call upon your Sony dealer regarding this product.
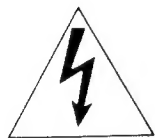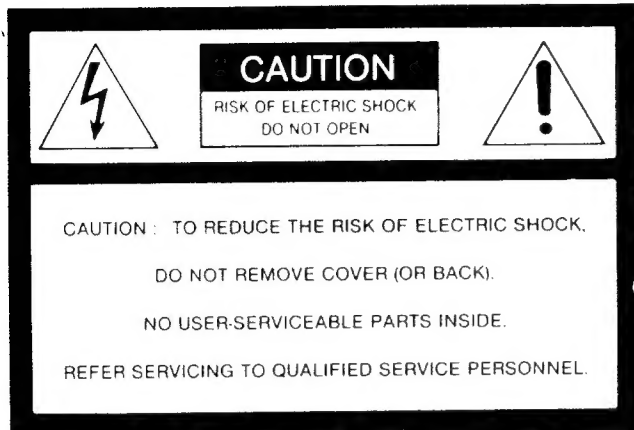
Model No. _____   Serial No. _____

CONTENTS

The photograph and illustrations in this manual are those of the KV-25XBR but the operations are the same on the KV-20XBR.

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION : TO REDUCE THE RISK OF ELECTRIC SHOCK,

DO NOT REMOVE COVER (OR BACK).

NO USER-SERVICEABLE PARTS INSIDE.

REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

CAUTION

TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS POLARIZED AC PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

INFORMATION

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient the receiving antenna
Relocate the equipment with respect to the receiver
Move the equipment away from the receiver
Plug the equipment into a different outlet so that equipment and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful:

"How to Identify and Resolve Radio-TV Interference Problems". This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

The shielded interface cable recommended in this manual must be used with this equipment in order to comply with the limits for a computing device pursuant to Subpart J of Part 15 of FCC Rules.

PRECAUTIONS

Safety

● Operate the set only on 120 V AC.
● One blade of the plug is wider than the other for the purpose of safety and will fit into the power outlet only one way. If you are unable to insert the plug fully into the outlet, contact your dealer.
● Should any liquid or solid object fall into the cabinet, unplug the set and have it checked by qualified personnel before operating it any further.
● Unplug the set from the wall outlet if it is not going to be used for several days or more. To disconnect the cord, pull it out by the plug. Never pull the cord itself.

Installation

● To prevent internal heat build-up, do not block the ventilation openings.
● Do not install the set in a hot or humid place or in a place subject to excessive dust or mechanical vibration.

Cleaning

Clean the set with a slightly damp soft cloth. Use a mild household detergent. Never use strong solvents such as thinner or benzine as they might damage the finish of the cabinet.

Repacking

Retain the original carton and packing materials for safe transport of this set in the future.

Use of this television receiver for other than private viewing of programs broadcast on UHF or VHF or transmitted by cable companies for the use of the general public may require authorization from the broadcaster/cable company and/or program owner.
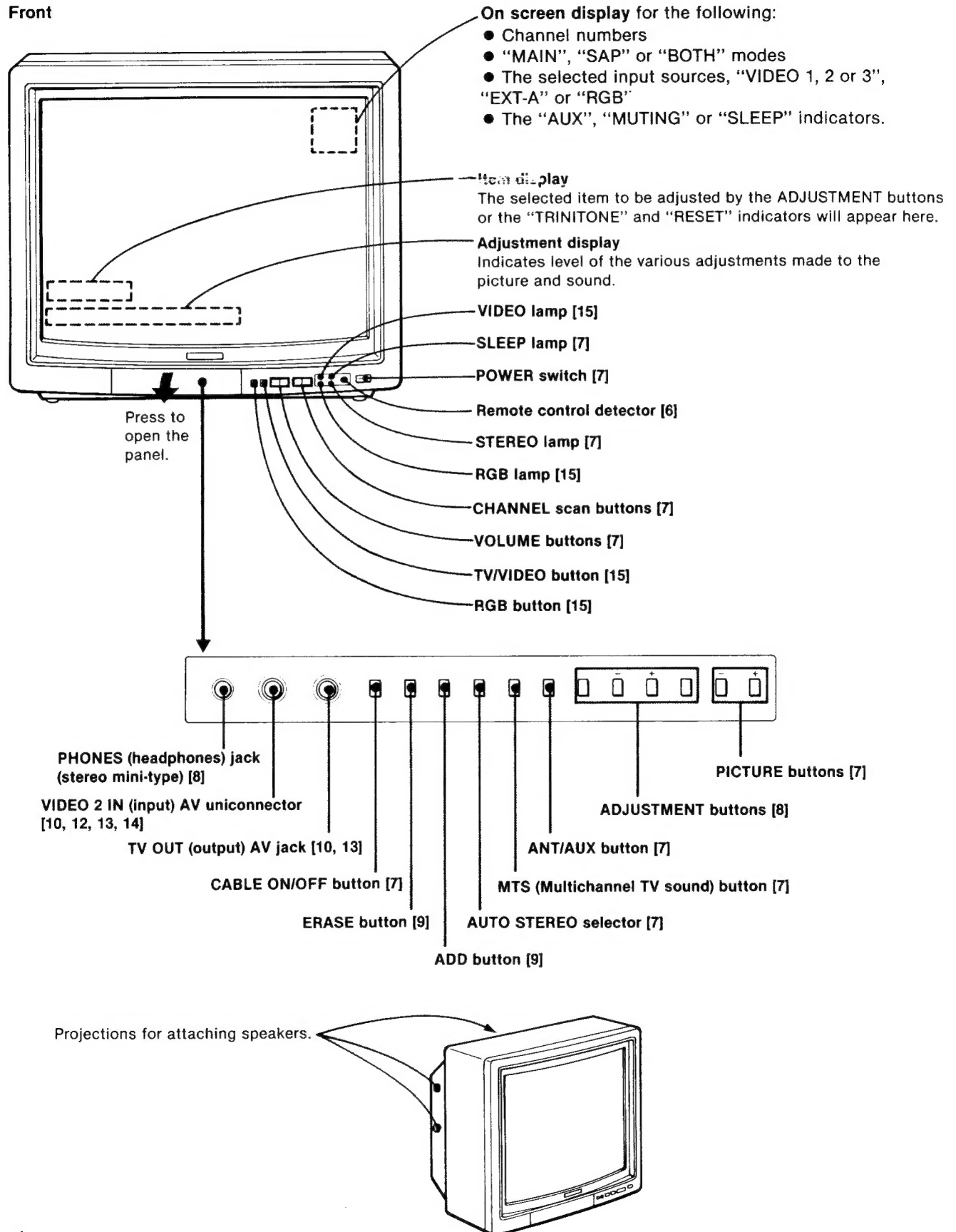
FEATURES

● **New Microblack™ Trinitron®** picture tube with more finely pitched aperture grille for higher resolution, higher contrast picture
● **Built-in stereo decoder** decodes MTS (Multichannel TV Sound) broadcasts into left and right stereo or SAP (Second Audio Program) channels *
● **Multi-band VHF/UHF/CATV tuner** receives up to 125 cable channels for a total of 181 possible off-air and cable channels
● **Supplied detachable speakers** featuring Sony's APM (Accurate Pistonic Motion) technology, magnetically shielded to provide superb sound reproduction with no interference to picture quality
● **Two built-in video and L/R audio line inputs and a new AV uniconnector** allow direct hook-up to VCRs, video disc players, video games or other audio/video sources. The AV uniconnector receives combined video and L/R audio signals for one easy connection.
● **Built-in video and L/R audio line outputs** provide the selected output from the TV tuner or any of the equipment connected to the audio-video line inputs or the AV uniconnector.
● **An AV (audio and video combined) type output jack** for continuous output from the TV tuner and easy connection
● **Built-in RGB input** for higher resolution display of computer-generated text and color graphics
● **Full-function RM-724 Remote Commander** provides wireless control of all operating controls
● **On-screen displays** for easy reference to operating modes and adjustments
● **Trinitone™ control** allows you to adjust the color temperature(tint) of the picture for the most pleasing color
● **New Dynamic Color™ circuitry** assures accurate, life-like skintones and pure whites
● **Dynamic Picture™ circuitry** automatically adjusts the picture contrast to produce more detail in bright and dark areas of the scene
● **Dynamic Focus™ circuitry** automatically focuses the scanning electron beam for enhanced sharpness over the entire picture, especially in the corners
● **Colorpure Filter™** separately processes B/W picture information from color information to produce a dramatically sharper picture

*Depends on availability of off-air stereo broadcasts.

LOCATION OF CONTROLS

For details on the use of each control, refer to the pages indicated in brackets.
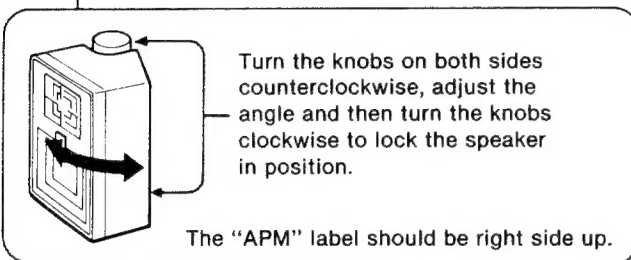See page 10 for the location of jacks and controls on the back.

Front

On screen display for the following:
- Channel numbers
- "MAIN", "SAP" or "BOTH" modes
- The selected input sources, "VIDEO 1, 2 or 3", "EXT-A" or "RGB"
- The "AUX", "MUTING" or "SLEEP" indicators.

Item display
The selected item to be adjusted by the ADJUSTMENT buttons or the "TRINITONE" and "RESET" indicators will appear here.

Adjustment display
Indicates level of the various adjustments made to the picture and sound.

VIDEO lamp [15]

SLEEP lamp [7]

POWER switch [7]

Remote control detector [6]

STEREO lamp [7]

RGB lamp [15]

CHANNEL scan buttons [7]

VOLUME buttons [7]

TV/VIDEO button [15]

RGB button [15]

Press to open the panel.

PHONES (headphones) jack (stereo mini-type) [8]

VIDEO 2 IN (input) AV uniconnector [10, 12, 13, 14]

TV OUT (output) AV jack [10, 13]

CABLE ON/OFF button [7]

ERASE button [9]

ADD button [9]

AUTO STEREO selector [7]

MTS (Multichannel TV sound) button [7]

ANT/AUX button [7]

ADJUSTMENT buttons [8]

PICTURE buttons [7]

Projections for attaching speakers.

4

SET-UP

SPEAKERS

Placement

Attaching the speakers to the TV

Right speaker (Rear) Left speaker

Insert

Set BASS BOOST to ON

SPEAKER terminals

Turn the knobs on both sides counterclockwise, adjust the angle and then turn the knobs clockwise to lock the speaker in position.

The "APM" label should be right side up.
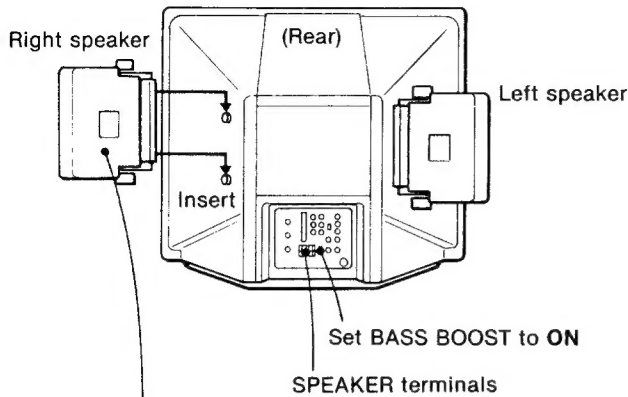
If desired, the speakers can be placed separately from the TV by unfolding the stand.

Unfold
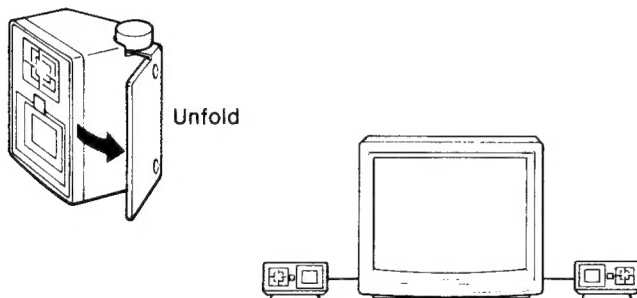
● Adjust the angle of the speakers, for best sound production.

Connection

The speaker cord marked with a red line should be connected to the $\oplus$ (red) terminal and the cord unmarked to the $\ominus$ (black) terminal for correct in-phase operation.

While pressing the button, insert the wire into the hole, then release the button.

Pull lightly on the connection to make sure it is secure.

Right speaker Left speaker

R L

Red line

Red line

Speaker cords

If desired, larger 8-ohm speakers can be used as long as they are rated at 8-ohm impedance.
Expose and twist the wire ends of the cords of your speakers as illustrated below, and make the correct $\oplus$ $\ominus$ connections. For large speakers, set BASS BOOST switch on the TV to "OFF" to prevent excessive bass.

5/8" (15mm)

Strip about 5/8" (15mm) of the wire insulation from the ends...
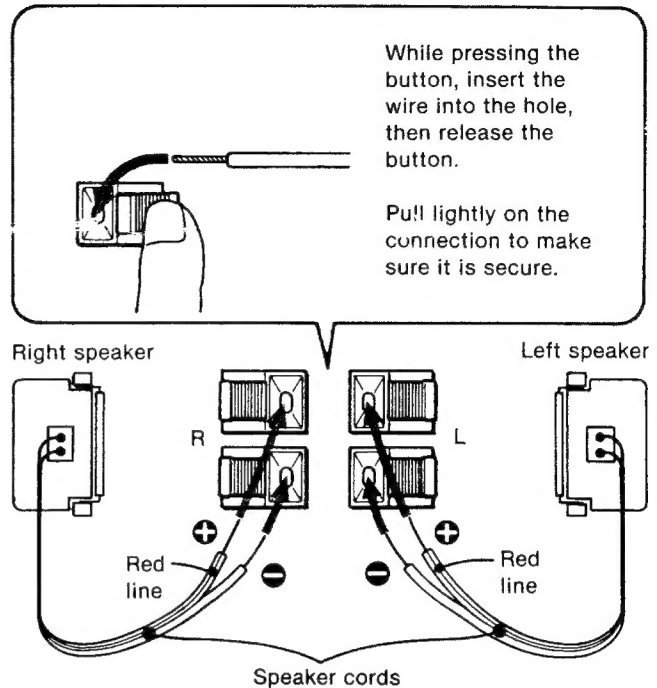
and then twist the wire ends.

Caution
● Be sure to use speakers that are rated at 8-ohm impedance with normal power holding capacity of more than 7W for the KV-20XBR and of more than 10W for the KV-25XBR.
● Make sure that none of the wire strands stick out, making contact with the neighboring speaker terminals.
● If you have connected a pair of speakers other than the supplied speakers, make sure to place the TV set at a distance away from the speakers so that it will not be affected by the speaker magnets. If a temporary proximity to magnets should cause portions of the picture to have poor color, turn the POWER off, and after about 10 minutes, turn it on again.

Speakers with low magnetic flux leakage such as the SS-X10A speaker system (optional) may be placed near the set.
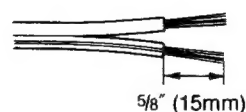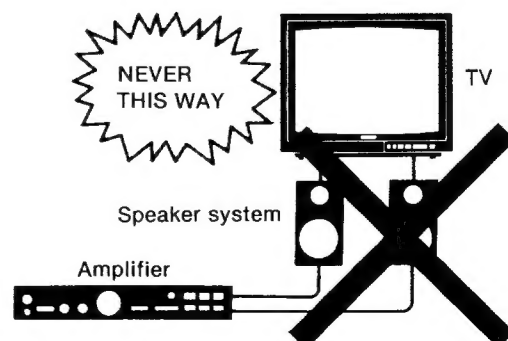
● Never connect an amplifier and this TV simultaneously to the speakers as this may damage the TV.

NEVER THIS WAY

TV

Speaker system

Amplifier

REMOTE COMMANDER

1 Turn the Remote Commander face down, press the tab and lift the cover.

2 Place batteries in the Commander with the polarities in the correct directions, as illustrated inside the case.

3 Replace the cover.

Notes

● Use 2 size AA batteries (IEC designation R6).

● In normal operation, batteries will last up to half a year. If the set does not operate properly, the batteries might be exhausted. Replace all with new ones.

● To avoid damage from possible battery leakage, remove the batteries for extended unused periods.

● Be sure that there are no obstructions between the Commander and the TV.

● Operable range is limited.

Remote control detector
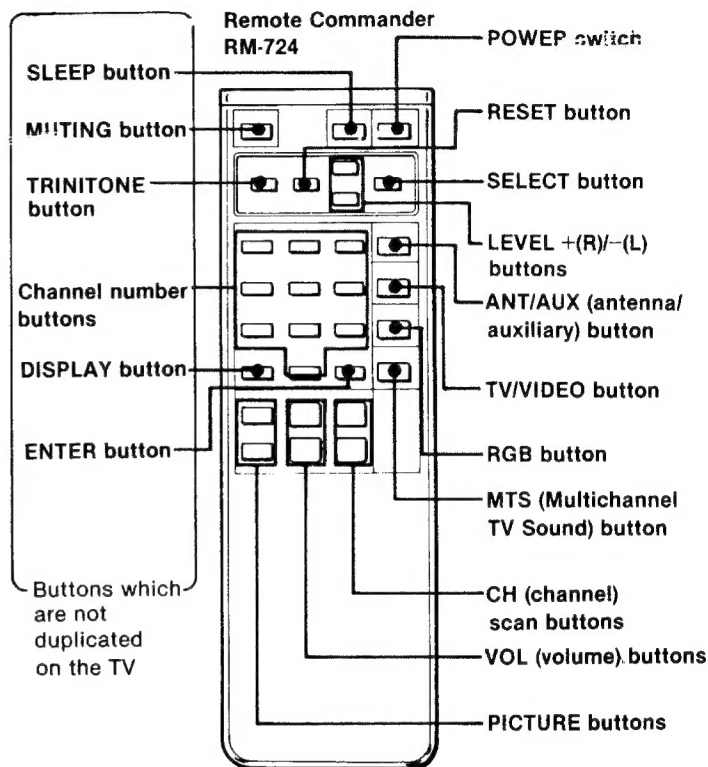
7 meters (23 feet)

30°   30°

Operable range
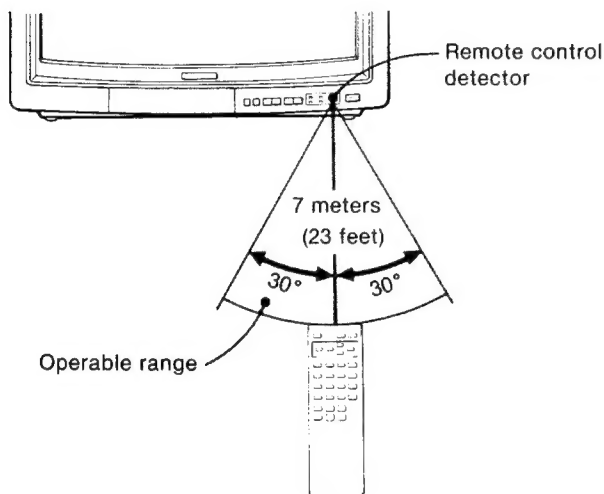
OPERATION

VIEWING TV PROGRAMS

This TV set is capable of receiving normal VHF and UHF broadcasts plus cable TV channels. (See "Cable TV channel chart" below.)

Usually the Remote Commander is all that is needed to operate the TV set in everyday use.

Remote Commander RM-724

SLEEP button

MUTING button

TRINITONE button

Channel number buttons

DISPLAY button

ENTER button

Buttons which are not duplicated on the TV

POWER switch

RESET button

SELECT button

LEVEL +(R)/−(L) buttons

ANT/AUX (antenna/ auxiliary) button

TV/VIDEO button

RGB button

MTS (Multichannel TV Sound) button

CH (channel) scan buttons

VOL (volume) buttons

PICTURE buttons

Cable TV channel chart*

Cable TV systems use letters or numbers to designate channels. To tune in a channel, refer to this chart.

Number on this TV						1	5	6	14	15	16	17
Corresponding CATV channel						A−8	A−7	A−6	A	B	C	D

18	19	20	21	22	23	24	25	26	27	28	29	30
E	F	G	H	I	J	K	L	M	N	O	P	Q

31	32	33	34	35	36	37	38	39	....	....	93	94
R	S	T	U	V	W	W+1	W+2	W+3	....	....	W+57	W+58

95	96	97	98	99	100	101	102	....	....	123	124	125
A−5	A−4	A−3	A−2	A−1	W+59	W+60	W+61	....	....	W+82	W+83	W+84

Check with your local cable TV company for more complete information on the available channels.

*The designation of the cable TV channels conforms to the EIA/NCTA recommendation.

Preparation

Make sure the following are properly set.
● On-screen "VIDEO 1, 2 or 3", "EXT-A" or "RGB" * indicators and the RGB or VIDEO lamp should be off.
(Press TV/VIDEO button or RGB button as many times as necessary until they go out.)
● AUTO STEREO selector should be set to ON (depressed).
Depending on the channel to be viewed, check the following and change as necessary.
● CABLE ON/OFF button
    For VHF and UHF channels, set to OFF 🔲.
    For cable TV channels, set to ON 🔲.
● On-screen "AUX" * indicator
    (Press ANT/AUX button to change as necessary.)
    For VHF, UHF and regular cable TV channels:
        The indicator should be off.
    For pay cable TV channels:
        The indicator should be displayed.

*The displays, "VIDEO" "EXT-A", "RGB" or "AUX" indicate that signals fed in through the VIDEO 1/3 INPUT jacks, VIDEO 2 IN AV uniconnector, the external audio jacks, the RGB MULTI INPUT connector or through the AUX terminals are being received.

1 **Press POWER to turn on the TV.**
   The channel number will be displayed on the screen and the SLEEP lamp will light up for several seconds.

2 **Select channels in one of the following two ways.**
   ● Press the numeral(s) of the channel and then press ENTER.
   Ex. To select channel 6, press 6 and then ENTER.
       To select channel 125, press 1, 2, 5 and then ENTER.
   If you pressed a wrong numeral, wait for a few seconds and it will disappear. Then try again.
   ● Press CH "+" for higher-numbered channels and "−" for lower-numbered channels. Preset channels will appear in sequence. (For presetting desired channels, see page 9.)
   The channel display will remain on the screen for a few seconds. To keep the display on the screen, press DISPLAY.

3 **Adjust the volume and picture to your preference, if necessary.**
   Press VOL "+" to increase volume, or "−" to decrease it.
   Press PICTURE "+" to increase picture contrast, or "−" to decrease it.

If the picture rolls vertically, turn V HOLD control on the rear panel until the picture stabilizes.

V HOLD

To mute the sound immediately, press MUTING. The "MUTING" display will appear and remain on the screen. Press it again to restore the sound to its previously-set level or press VOLUME +.

To turn off the set, press POWER again.

To have the set turn off automatically after one hour, press SLEEP. The "SLEEP" display will appear on the screen a few seconds and the SLEEP lamp on the TV will remain lit for one hour.

To cancel the sleep timer, press SLEEP again so that the "SLEEP" display disappears, or turn off the TV.

LISTENING TO MULTICHANNEL TV SOUND(MTS) BROADCASTS

In the years to come, an increasing number of programs will be broadcast in stereo. Called Multichannel TV Sound or MTS, the new technology will greatly enhance TV viewing by bringing you programs with high fidelity stereo sound. MTS also provides for an extra channel called the Second Audio Program or SAP which broadcasters can use to transmit a second language for bilingual transmissions or some other sound track.

To receive a stereo program
Normally set the AUTO STEREO selector to ON (depressed). In this position, the STEREO lamp on the TV will light up whenever a stereo broadcast is received.
To listen to the stereo sound, select the MAIN mode with the MTS button so that the on-screen MAIN indicator appears. The stereo sound will be heard from the left and right speakers.

Every push on the MTS button changes the indicator below the channel number as follows:

MAIN ⟶ SAP ⟶ BOTH

When there is a SAP (Second Audio Program) broadcast
Select the SAP mode so that the SAP indicator will be displayed and only the SAP sound will be heard from both speakers.

To listen to both MAIN and SAP broadcasts
Select the BOTH mode so that the BOTH indicator is displayed. The MAIN and SAP sounds will come out from the left and right speakers respectively.
The MAIN sound becomes monaural(mixed) even if it is a stereo broadcast, as the sound comes only from the left speaker.

Notes
● The selected mode will be retained even after the power has once been turned off.
● There may be cases of stereo broadcasts where excessive "noise" will be heard due to a weak incoming signal. By switching the AUTO STEREO selector to OFF and returning to a monaural mode, the noise should be eliminated.
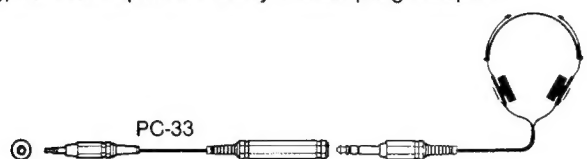
Use of headphones

For private listening of sound, connect a pair of 8-ohm headphones (optional) to the PHONES jack. The sound from the speakers will be cut off automatically.

PHONES (stereo mini-type) jack
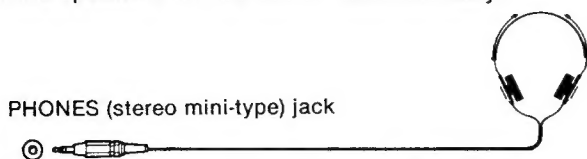
If the plug of your headphones is a stereo phone-type plug, use the optional Sony PC-33 plug adaptor.

PC-33

An earphone can also be connected to listen to the monaural (left channel) sound.

ADDITIONAL PICTURE AND SOUND ADJUSTMENTS

(Hue: Color: Brightness: Sharpness: Treble: Bass: Balance)

Additional picture and sound adjustments besides the adjustments made by the PICTURE and VOL (volume) buttons can be made as follows although your TV comes with its picture and sound preset at the factory for optimum performance.

The adjustments made can be cleared and the factory preset levels will be restored at once when the **RESET button** is pressed. (A "RESET" indicator will appear for a few seconds.)

Controls are inside the front panel.
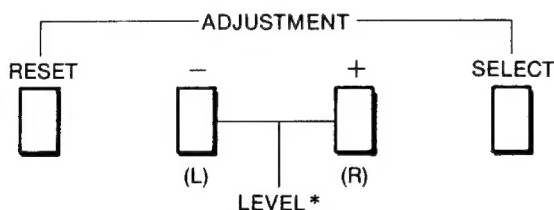
*"LEVEL" is printed above the buttons on the KV-20XBR.

1 Press SELECT button consecutively until the on-screen display of the item you desire to adjust appears.
The display will change as follows:

HUE → COLOR → BRIGHT → SHARP → TREBLE → BASS → BALANCE → back to HUE

The display will disappear after a few seconds but will appear again when the next step is taken.

2 Press LEVEL +(R)/−(L) button to adjust the selected item.

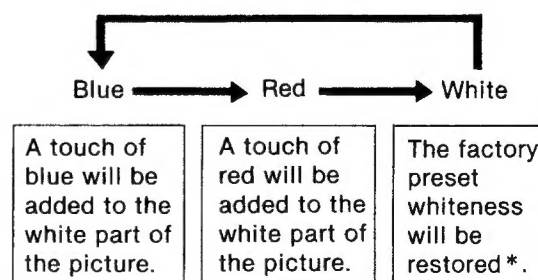|	Selected item	−/(L) Left button	+/(R) button
PICTURE ADJUSTMENT	HUE	Skin tones become purplish	Skin tones become greenish
	COLOR	For less color intensity	For more color intensity
	BRIGHT	For less brightness	For more brightness
	SHARP	For less sharpness	For more sharpness
SOUND ADJUSTMENT	TREBLE	To decrease treble response	To increase treble response
	BASS	To decrease bass response	To increase bass response
	BALANCE	To emphasize the left speaker's volume	To emphasize the right speaker's volume

On-screen color-bar displays

When any of the above adjustments are made, a colored segmented bar appears on the screen to indicate the appropriate setting level.
● The HUE setting is indicated by the ratio of the red (left) and green (right) segments.
● The COLOR level is indicated by the number of red segments.
● The BRIGHT, SHARP, TREBLE and BASS levels are indicated by the number of green segments.
● The stereo BALANCE is indicated by the ratio of the green (left) and red (right) segments.
● While the VOL or PICTURE button is pressed, the number of green segments show the sound or picture level.
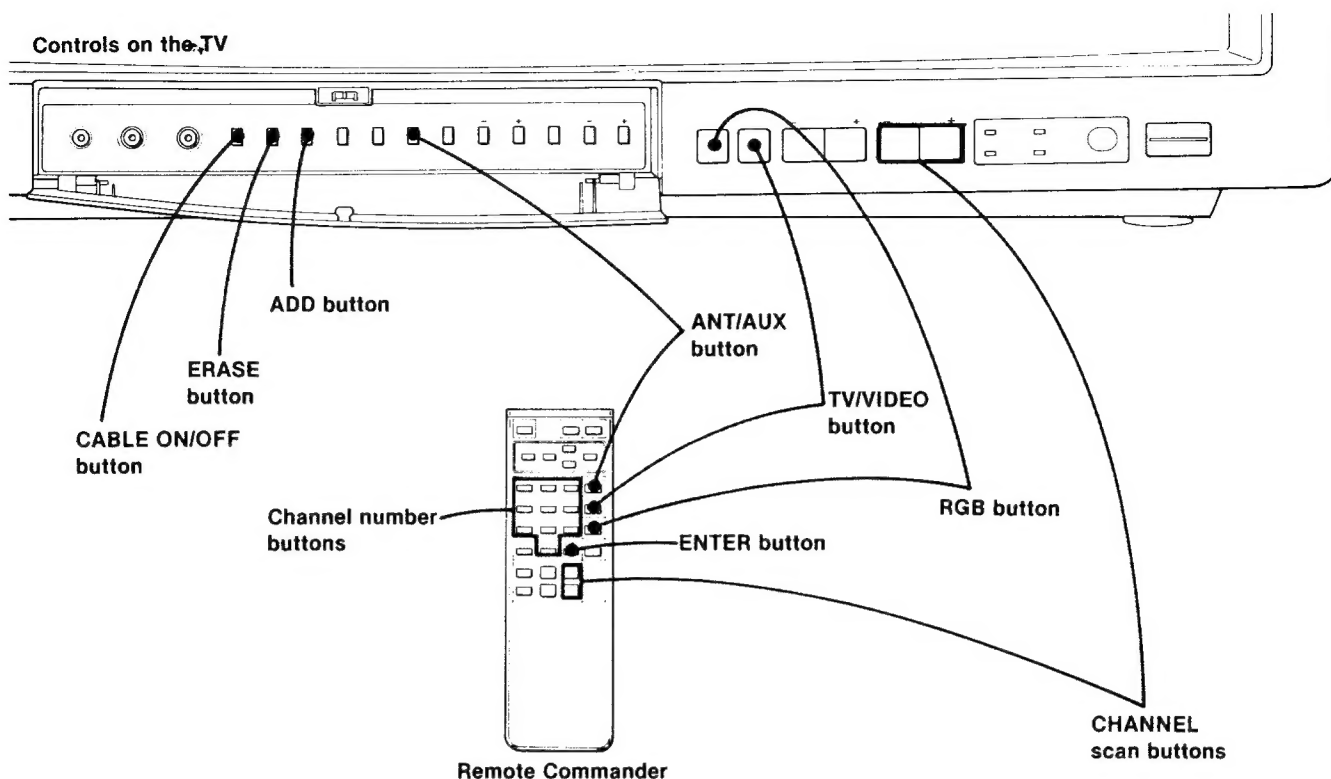
TRINITONE adjustment

Usually color picture tubes are manufactured with a fixed color temperature (tint) that determines the "warmness (reddish)" or "coolness (bluish)" of the picture it produces. With Sony's Trinitone feature, you can adjust the tint of the picture to your own color preference. The adjustment is made using the color white as reference. When you press the TRINITONE button, a "WHITE" indicator will appear on the screen. Each consecutive press of the TRINITONE button will change the color of the indicator as follows:

Blue ➡ Red ➡ White

A touch of blue will be added to the white part of the picture.	A touch of red will be added to the white part of the picture.	The factory preset whiteness will be restored *.

*The TRINITONE adjustment will return to its factory-preset level at once when the RESET button is pressed.

PRESETTING CHANNELS

ADD button

ERASE button

CABLE ON/OFF button

ANT/AUX button

TV/VIDEO button

Channel number buttons

RGB button

ENTER button

CHANNEL scan buttons

Remote Commander

Receivable channels of your set are:
VHF: 2–13
UHF: 14–69
CATV: 1–125
By adding and erasing channels, you can preset your TV so that only the desired channels appear in sequence when the CHANNEL +/– are pressed.

PREPARATION

1 **Turn on TV.**
2 **Make sure the following are properly set.**
   On-screen "VIDEO 1, 2 or 3", "EXT-A" or "RGB" in-dicators and the RGB or VIDEO lamp should be off. (Press TV/VIDEO button or RGB button as necessary until they go out.)
3 **According to the channel to be added or erased, check the following and make the necessary changes if any.**
   ● CABLE ON/OFF button
      For VHF and UHF channels, set to OFF ⊓
      For cable TV channels, set to ON ⊔
   ● On-screen "AUX" indicator
   (Press ANT/AUX button as necessary.)
      For VHF, UHF and regular cable TV channels:
         The indicator should be off.
      For pay cable TV channels:
         The indicator should be displayed.

ADDING CHANNELS

1 **Select the channel to be added by pressing the channel number buttons and then ENTER.**
2 **Press ADD.**
   A "+" indication will appear on the left of the channel display on the screen, indicating that the channel will appear in the proper numerical sequence when you press CHANNEL +/–.
Repeat steps 1 and 2 for other channels to be added.

ERASING CHANNELS

1 **Select the channel to be erased.**
2 **Press ERASE.**
   A "–" indication will appear on the left of the channel display on the screen, indicating that the channel has been erased. When CHANNEL +/– are pressed, you will see that the channel is skipped over in the numerical sequence.
Repeat steps 1 and 2 for other channels to be erased. To add erased channels again, follow the steps in "AD-DING CHANNELS".
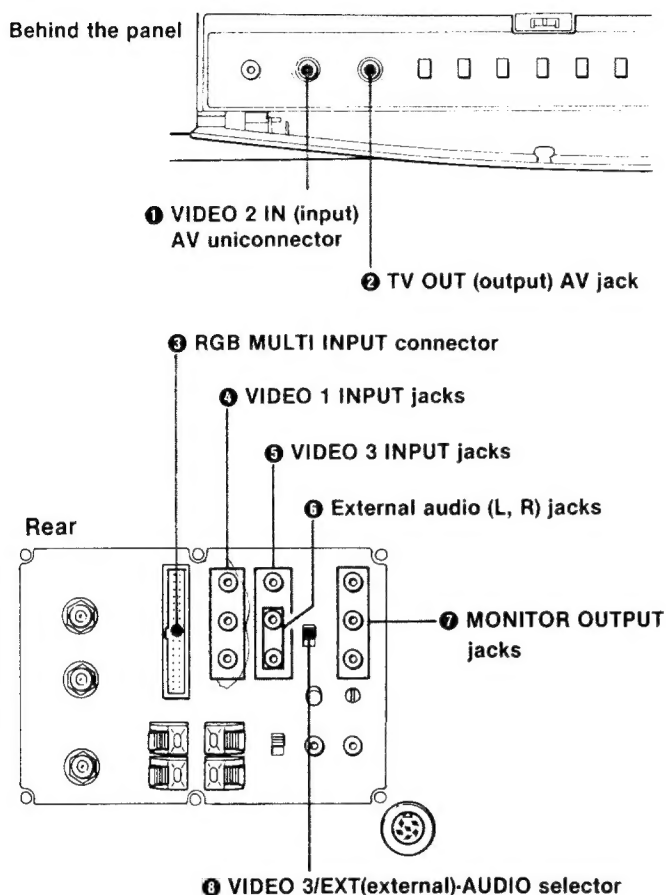
Note
You cannot erase a VHF or UHF channel from the memory and retain a cable TV channel which has the same number, or vice versa. If either a VHF/UHF channel or a cable TV channel with the same number is to be kept in the memory, do not erase the number.

APPLICATIONS WITH OTHER OPTIONAL EQUIPMENT

This unit is equipped with various input/output jacks and terminals for your desired equipment to be connected.

For details on the various optional connecting cables to be used, see "OPTIONAL AUDIO/VIDEO CONNECTING CABLES" on page 11.

Front

Behind the panel

❶ VIDEO 2 IN (input) AV uniconnector

❷ TV OUT (output) AV jack

❸ RGB MULTI INPUT connector

❹ VIDEO 1 INPUT jacks

❺ VIDEO 3 INPUT jacks

❻ External audio (L, R) jacks

Rear

❼ MONITOR OUTPUT jacks

❽ VIDEO 3/EXT(external)-AUDIO selector

❶ VIDEO 2 IN (input) AV uniconnector (AV jack)
Connect to the video and audio output jacks of a video cassette recorder or microcomputer. Video and audio signals are transmitted simultaneously.

❷ TV OUT (output) jack (AV jack)
Connect to the video and audio input jacks of a video cassette recorder to record the output of the TV's built-in tuner. The TV tuner output will always be supplied even while other input signals are being viewed on the screen.

To record a TV program while viewing another video source
1 Select the TV channel you desire to record.
2 Start recording on the VCR.
3 Press either TV/VIDEO button or RGB button to select the desired source to be displayed.

Note
● The TV channel (and therefore the output of this jack) will change if you press the channel number or CHANNEL scan buttons even while the on-screen "RGB" indicator or RGB lamp is lit.
● The TV channel cannot be changed when the on-screen "VIDEO" indicator or VIDEO lamp is lit.

❸ RGB MULTI INPUT connector (34-pin jack)
This connector allows direct RGB hook-up to a microcomputer having RGB output.

When connecting the microcomputer, use a connecting cable with a 34-pin plug that will match the RGB output of the equipment to the pin assignment of this connector designated on page 19.
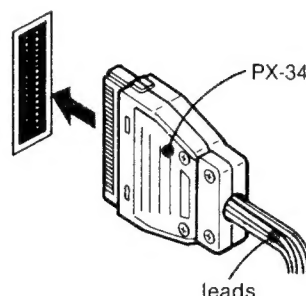
PX-34

leads

To connect a cable with loose signal leads instead of a plug, use an optional PX-34 RGB multi connector. For details on the arrangement and the connection of the leads, read the instruction manual of the PX-34.

❹ VIDEO 1 INPUT jacks
❺ VIDEO 3 INPUT jacks
Connect to the video and audio output jacks of a VCR*, video disc player, etc.

VIDEO jack (phono, yellow) → to video output jack

AUDIO L jack (phono, white) → to audio L (left channel) output jack

AUDIO R jack (phono, red) → to audio R (right channel) output jack

*You will achieve better picture and sound quality than by connecting the VCR only to the antenna terminal.

❻ External audio (L/R) jacks
An external audio source can be connected to these jacks to be combined with the picture of the selected TV program. Connect to the audio/line output of the audio source.

To view FM simulcasted programs, see page 16.

❼ MONITOR OUTPUT jacks (phono type)
Connect to the video and audio input jacks of a video cassette recorder or color monitor. Either the TV or VCR signal selected by the TV/VIDEO button is supplied.
To record only the sound, connect the audio input jacks of a tape recorder to the AUDIO L and R jacks with a connecting cable such as the optional RK-74A.
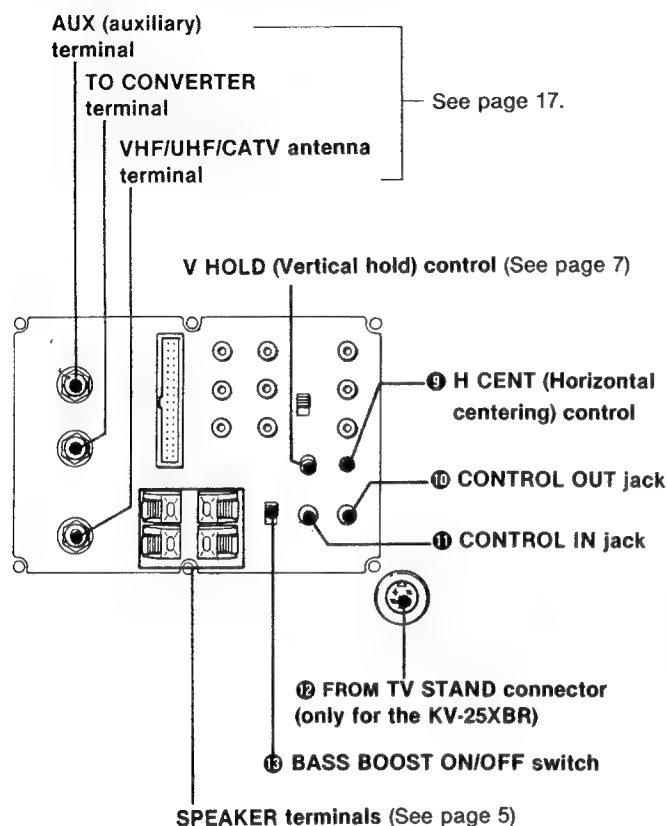**Note**
The RGB signals are not supplied (and therefore will not be recorded on the connected VCR) from these jacks even when the RGB signals are displayed on the screen.

❽ VIDEO 3/EXT(external)-AUDIO selector

If you have connected a VCR, video disc player, etc., to the VIDEO 3 INPUT jacks, set to "VIDEO 3".
If you desire to mix the sound of the external audio source connected to the ❻ External audio jacks with the picture of the TV program, set to "EXT-AUDIO"

AUX (auxiliary) terminal

TO CONVERTER terminal

VHF/UHF/CATV antenna terminal

— See page 17.

V HOLD (Vertical hold) control (See page 7)

❾ H CENT (Horizontal centering) control

❿ CONTROL OUT jack

⓫ CONTROL IN jack

⓬ FROM TV STAND connector (only for the KV-25XBR)

⓭ BASS BOOST ON/OFF switch

SPEAKER terminals (See page 5)

❾ H CENT (horizontal centering) control

Usually keep this control at the center detent position. If the display of the equipment connected to the ❸ RGB MULTI INPUT connector is shifted off center to the left side or right side of the screen, turn this control until the display is centered.

❿ ⓫ CONTROL IN/OUT jacks

These jacks are for connecting a future audio or video product also equipped with similar CONTROL IN or OUT jacks for the expansion of your audio-video system.

⓬ FROM TV STAND connector (6-pin DIN)

(Only for the KV-25XBR)
Connect the optional SU-171 TV stand which will enable you to turn on and off the power, adjust the volume, and select the channel of this TV with foot pedals.

⓭ BASS BOOST ON/OFF switch

When the supplied side-mounting speakers are used, set this switch to ON to enhance the bass sound. When a larger speaker system is used, set this switch to OFF to prevent excessive bass.

CONNECTIONS

OPTIONAL AUDIO/VIDEO CONNECTING CABLES

The optional connecting cables to be used for connecting other equipment depend upon what type of audio and video jacks the equipment you desire to connect has. The following charts will help you choose which cable you should use.

Cables to be connected to the VIDEO 1 and 3 INPUT jacks

The type of audio and video jacks of the equipment to be connected.	Connecting cable to be used
Video (phono-type) ⊚ Audio (L, R) (phono-type) ⊚ ⊚	VMC-2P3
Video (phono-type) ⊚ Audio (mini-type) ⊚	VMC-1MP3 (1 m), −2MP3 (2m)
Video (phono-type) ⊚ Audio (phono-type) ⊚	VMC-609MS

Cables to be connected to the VIDEO 2 IN and TV OUT (AV type) jacks

The type of audio and video jacks of the equipment to be connected.	Connecting cable to be used
Video (phono-type) ⊚ Audio (L, R) (phono-type) ⊚ ⊚	VMC-610S
Video (phono-type) ⊚ Audio (phono-type) ⊚	VMC-612MS *The PC-21 is supplied to the cable for a mini-type audio input.

The following are few examples of the possible connections.

NOTES ON CONNECTION
● Before connecting, make sure that the power to each piece of equipment is turned off.
● The plugs should be fully inserted into the jacks. A loose connection may cause hum and noise.
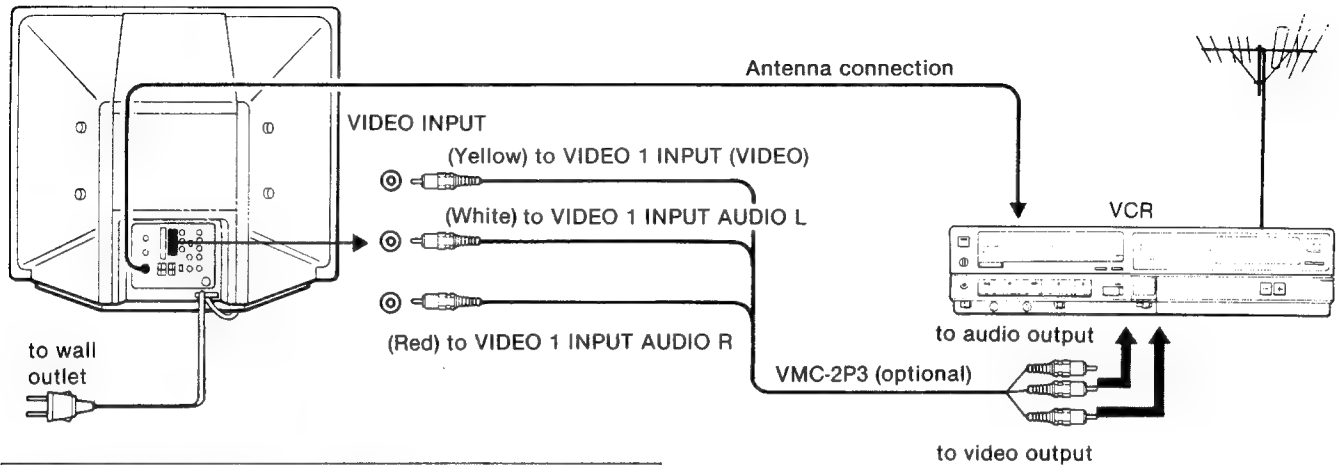● Match the color when connecting the plugs to the jacks.

VCR CONNECTION

Keep the VCR away from the TV, if the display or sound is affected.

Connecting VCRs that are capable of receiving TV broadcasts

Caution

Television programs, films, video tapes and other materials may be copyrighted. Unauthorized recording of such material may be contrary to the provisions of the copyright laws.

Antenna connection

VIDEO INPUT

(Yellow) to VIDEO 1 INPUT (VIDEO)

(White) to VIDEO 1 INPUT AUDIO L

VCR

(Red) to VIDEO 1 INPUT AUDIO R

to wall outlet

to audio output

VMC-2P3 (optional)

to video output

If you desire to connect another VCR, make the similar connection to the VIDEO 3 INPUT jacks and set VIDEO 3/EXT-AUDIO selector to "VIDEO 3".

With this connection, you will be able to...
● View the playback of tapes
● Record TV programs
● Record a TV program while viewing another

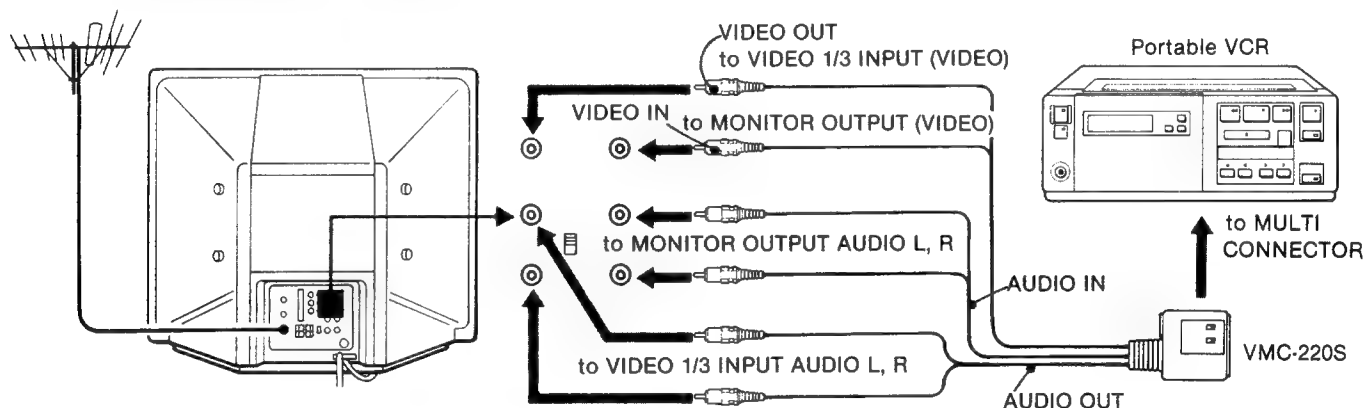**Connecting portable VCRs (that are not equipped with/connected to a TV tuner)**

Connection 1 ...**for playing back recorded tapes**

to video output

Portable VCR

to audio output

to
VIDEO 2 IN AV

VMC-612MS (optional)
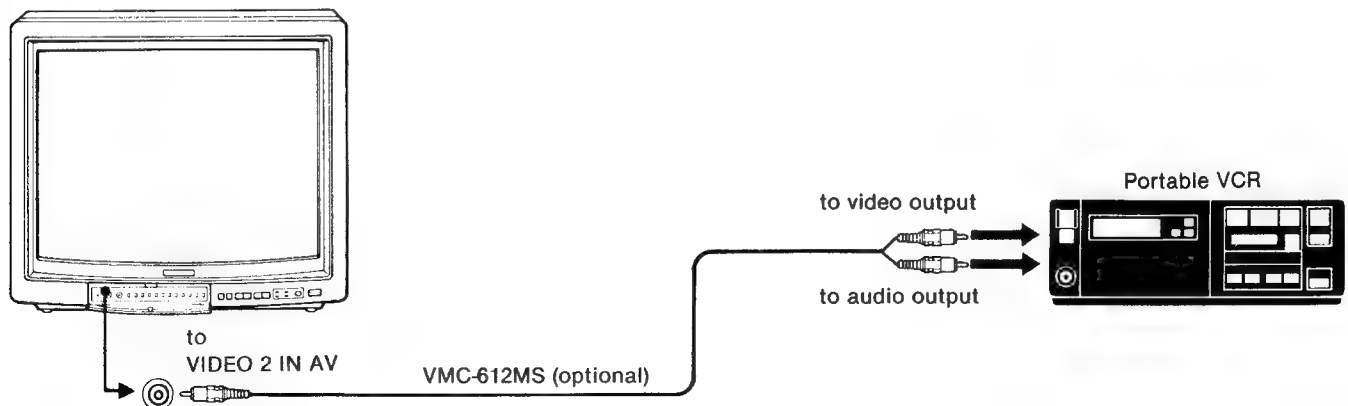
...**for playing back recorded tapes and recording TV programs**

to video input

to audio input

Portable VCR

VMC-612MS (optional)

to TV OUT
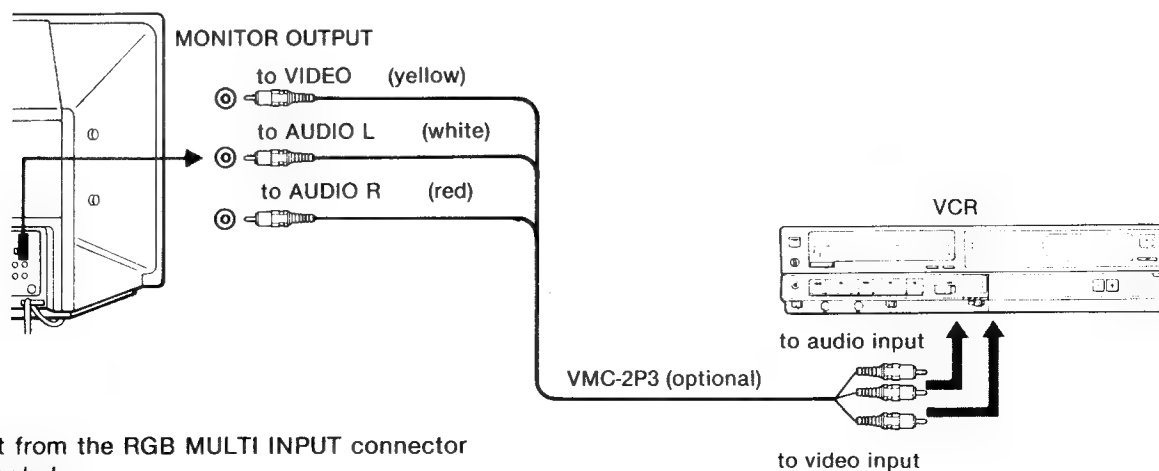
to VIDEO 2 IN AV

to video output

to audio output
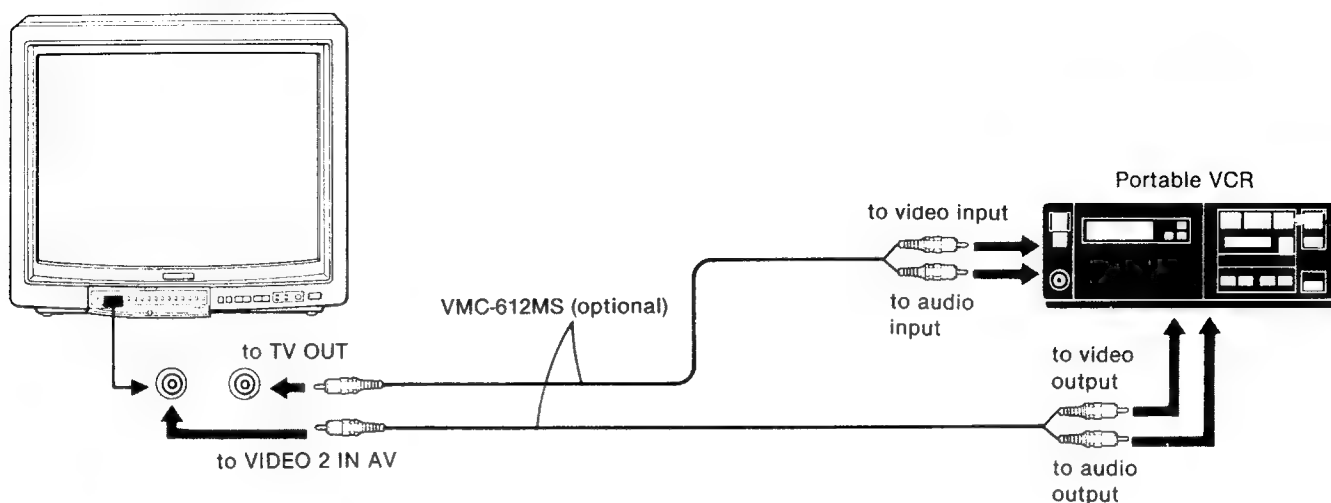
If your portable VCR is equipped with a MULTI CON-NECTOR, use the optional VMC-220S video monitor cable and connect the VCR to the back as follows.

VIDEO OUT
to VIDEO 1/3 INPUT (VIDEO)

VIDEO IN to MONITOR OUTPUT (VIDEO)

to MONITOR OUTPUT AUDIO L, R

to VIDEO 1/3 INPUT AUDIO L, R

Portable VCR

to MULTI CONNECTOR

AUDIO IN

VMC-220S

AUDIO OUT

Editing tapes by connecting a VCR to the MONITOR OUTPUT jacks

If a VCR is connected to the MONITOR OUTPUT jacks besides another VCR, video disc player, etc., connected to the VIDEO 1/3 jacks or VIDEO 2 IN AV uniconnector, you will be able to edit your own tapes by recording the selected video source (including the TV programs) displayed on the screen. For selecting the desired video source, see page 15.
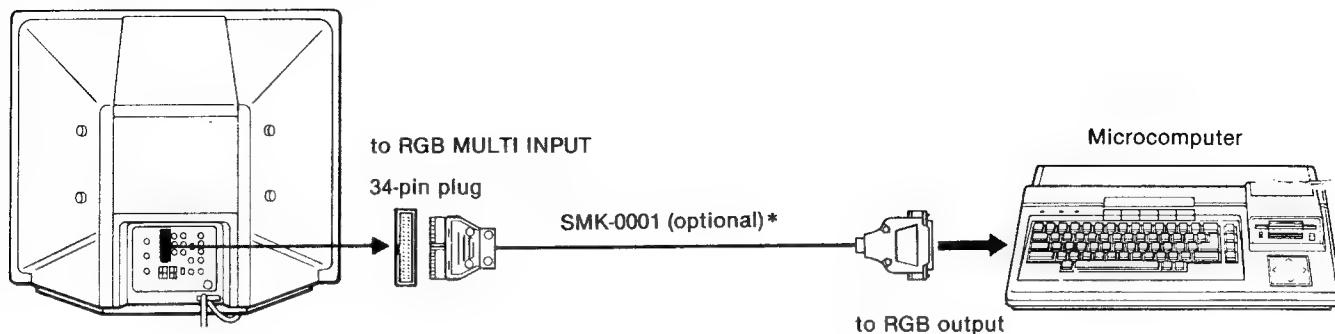

MONITOR OUTPUT

to VIDEO (yellow)

to AUDIO L (white)

to AUDIO R (red)

VCR

to audio input

VMC-2P3 (optional)

to video input

Note
The RGB input from the RGB MULTI INPUT connector cannot be recorded.

MICROCOMPUTER CONNECTION

Microcomputer with RGB output

to RGB MULTI INPUT

34-pin plug

SMK-0001 (optional) *

to RGB output

Microcomputer

*The connecting cable to be used depend upon the type of RGB output jack of the computer. The cable should arrange the output signals of the computer so that they match the signal assignment of the RGB MULTI INPUT connector of this unit (See page 19.). If you are not sure whether you can use your computer with this unit or which connecting cable to use, consult your authorized Sony dealer.

Microcomputer with video and audio outputs

Microcomputer

to video output

to audio output

to VIDEO 2 IN AV uniconnector

VMC-612MS
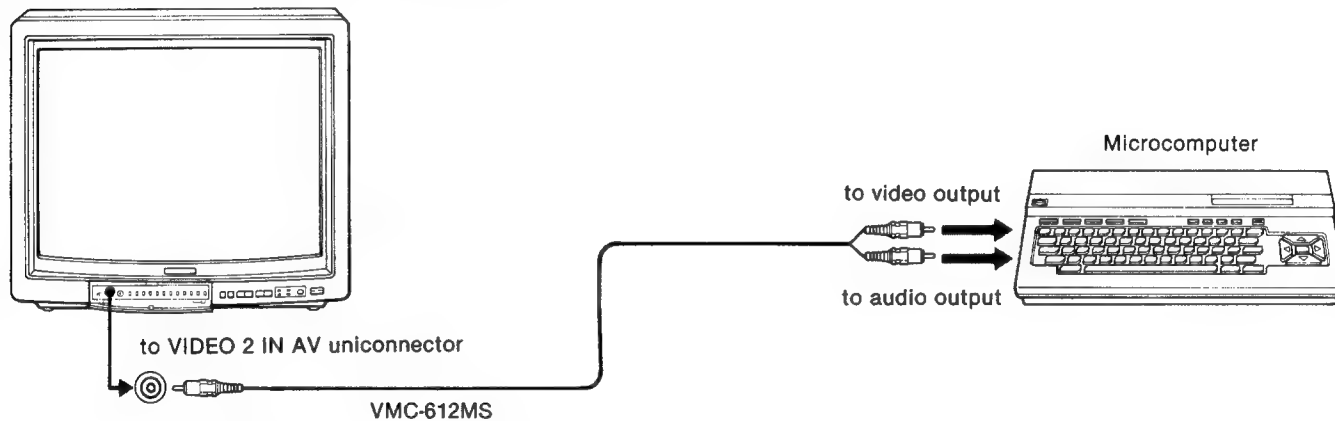
Note
If the display of the RGB signals are shifted off center to the right or left side of the screen adjust the H CENT control.

SELECTING THE VARIOUS AUDIO AND VIDEO SOURCES

VIEWING THE PICTURE OF THE EQUIPMENT CONNECTED TO THE VIDEO 1/3 INPUT or VIDEO 2 IN UNICONNECTOR

(If the "RGB" indicator is lit, press RGB button to turn it off.)
Press the TV/VIDEO button until the "VIDEO 1, 2 or 3" indicator of the VIDEO input jacks from which you desire the signals to come from appears.
The VIDEO lamp will light up.

The picture of the selected VCR

VIDEO lamp
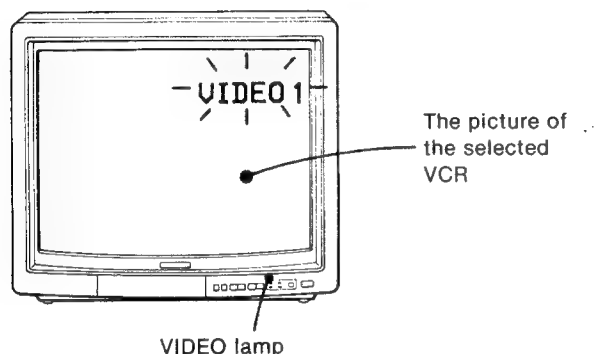
Every time you press the TV/VIDEO button, the display will change as follows:

VIDEO 1 → VIDEO 2 → VIDEO 3* → TV channel

Adjust the volume with the VOLUME buttons.

*Set VIDEO 3/EXT-AUDIO selector on the rear panel to "VIDEO 3" if "EXT-A" appears.

> The channel number buttons on the Remote Commander or the channel scan buttons will not function while the VIDEO lamp is lit.

TO LISTEN TO THE SOUND OF THE AUDIO SOURCE CONNECTED TO THE EXTERNAL AUDIO JACKS

1 Set VIDEO 3/EXT-AUDIO selector to "EXT-AUDIO".
2 Press TV/VIDEO button as many times as necessary until the on-screen "EXT-A" appears.

VIEWING THE DISPLAY OF THE EQUIPMENT CONNECTED TO THE RGB MULTI INPUT CONNECTOR

Press the RGB button to display the "RGB" indicator. The RGB lamp will light up.

The picture of the connected equipment

RGB lamp

Adjust the volume with the VOLUME buttons.
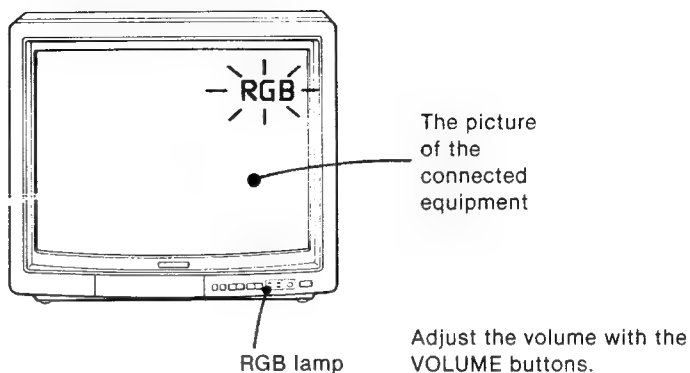
Viewing superimposed pictures
If the equipment connected to the RGB MULTI INPUT connector has a function of superimposing its RGB output on TV programs or on other video sources and you desire to view the superimposed picture,

1 Take the necessary steps to set the connected equipment into the superimposing mode. (For details, read the instruction manual of the connected equipment.)
2 Select the VIDEO 1, 2 or 3 or the TV mode with the TV/VIDEO button to select the input on which you desire to have the RGB input superimposed.
3 Press the RGB button so that the on-screen "RGB" indicator or the RGB lamp is lit.

To return to the normal TV program or to the picture of the VCR, press RGB again.

> **To have the indicators remain on the screen,** press the DISPLAY button on the Remote Commander. When the RGB input is superimposed on TV programs or on the VCR display, the selected channel or VIDEO 1, 2 or 3 indicator will appear for a few seconds first.

Notes
● The HUE, COLOR and SHARP (sharpness) adjustments are non-effective for the displayed RGB input. Adjust the picture with the PICTURE buttons or by adjusting the BRIGHT (brightness).
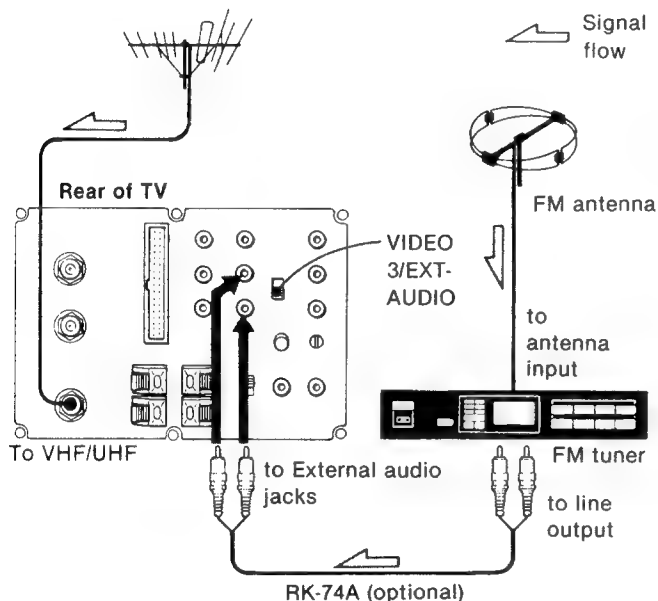● The selected source is retained even when the power is turned off once.

ENJOYING FM SIMULCASTED PROGRAMMING

Over-the-air FM simulcasts

Sometimes a TV station and an FM radio station will broadcast a program simultaneously so that viewers can enjoy TV programs in high-fidelity stereo. The video portion of the program is viewed normally by selecting the correct channel and the audio portion is heard in stereo by tuning to the correct FM station of the users FM tuner.

This TV featuring double-sided speakers has been equipped with External audio (L/R) jacks to allow the user to connect an FM tuner so that stereo simulcasts can be enjoyed on the TV's stereo speakers. Set-up is shown below.
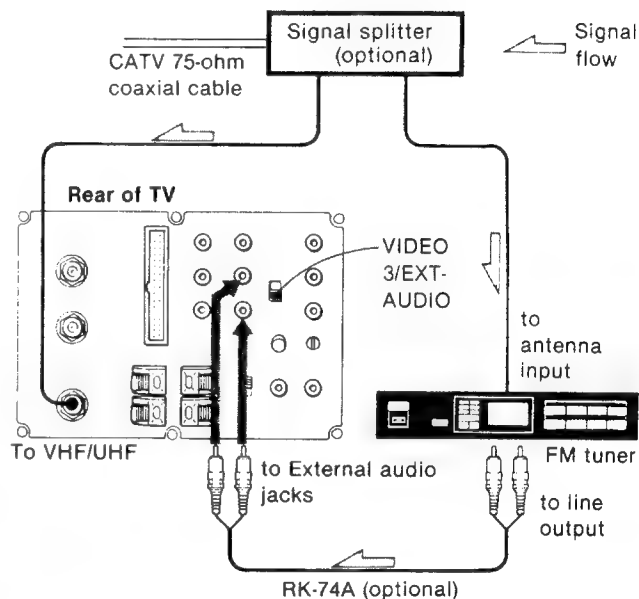
Connection

Rear of TV
VIDEO 3/EXT-AUDIO
FM antenna
to antenna input
To VHF/UHF
FM tuner
to External audio jacks
to line output
Signal flow
RK-74A (optional)

Over-the-cable FM simulcasts

Cable TV companies have also started "simulcasting" some channels like MTV (Music Television) and selected movies in stereo over the cable. In the case of cable stereo programs, however, the audio signal is not sent over the air but sent on FM frequencies over the cable. By splitting the incoming cable signal and running it to both the TV tuner and an FM tuner/receiver, these cable programs can be enjoyed in stereo over the TV's double-sided speakers as shown below.

Connection

Signal splitter (optional)
CATV 75-ohm coaxial cable
Signal flow
Rear of TV
VIDEO 3/EXT-AUDIO
to antenna input
To VHF/UHF
to External audio jacks
FM tuner
to line output
RK-74A (optional)

| Preparation |

Make sure the following are properly set.
- Set VIDEO 3/EXT-AUDIO to "EXT-AUDIO".
- Press TV/VIDEO button as many times as necessary so that the on-screen "EXT-A" indicator is displayed.
- On-screen "RGB" indicator or RGB lamp should be off.
(Press RGB button as necessary so that it goes off.)
- For over-the-air FM simulcasts, the CABLE ON/OFF button should be OFF ▫.
- For over-the-cable FM simulcasts, the CABLE ON/OFF button should be ON ▪, and depending on the channel to be viewed, the on-screen "AUX" indicator should be as follows:
(Press ANT/AUX button to change as necessary.)
    For regular cable TV channels:
        The indicator should be off.
    For pay cable TV channels:
        The indicator should be displayed.

| Operation |

1 Set the FM tuner to the frequency designated by the broadcaster.
2 Operate the TV the same as in usual TV viewing.

ANTENNA/CABLE CONNECTION

If you cannot obtain satisfactory reception with an indoor antenna, using an outdoor antenna may be necessary. Cable TV reception is only possible by connecting a cable supplied by your local cable operator.

Prepare the antenna or cable end using the appropriate connector, and connect the antenna or cable to the antenna terminal of the TV. (See A, B or C below.)

A | Combination VHF/UHF antenna,* VHF antenna, UHF antenna or CATV cable

Select the proper connector according to the cable type.

When the cable is a 75-ohm coaxial type (round)

When the cable is a 300-ohm ribbon type lead-in (flat)

Use an optional F-type connector.

Attach the supplied antenna connector.

Rear of TV
VHF/UHF

15 mm
(5/8 in.)

Fasten with a screwdriver.
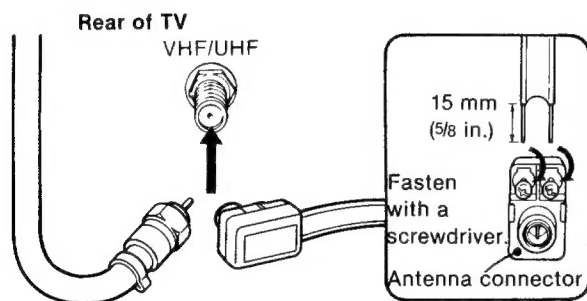
Antenna connector

*Most combination antennas are equipped with a signal splitter. Take off the splitter and attach the proper connector.

Note to CATV system installer in the U.S.A:

This reminder is provided to call the CATV system installer's attention to Article 820-22 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

If the supplied antenna connector has a slot as illustrated below:
The antenna connector can be used also as a U/V mixer.
When connecting both 75-ohm VHF and 300-ohm UHF antennas, or 300-ohm UHF antenna only;
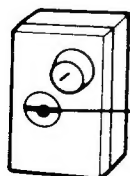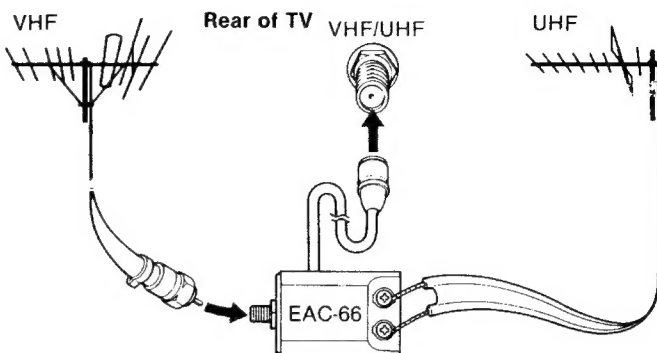
Should be **horizontal.**
(300 Ω UHF)
(75 Ω VHF)

To turn the slot, use a coin or a similar object.

B | When both VHF and UHF antennas are connected

Prepare the VHF antenna end using the appropriate connector as illustrated in **A**.
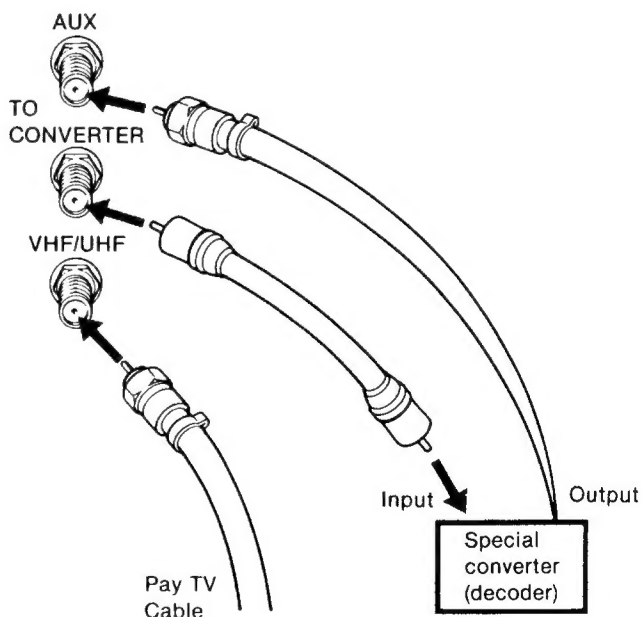Attach an optional EAC-66 U/V mixer to the TV antenna terminal, and connect the cables to the U/V mixer.

VHF   Rear of TV VHF/UHF   UHF

EAC-66

When the cable is connected to the TV with the U/V mixer, snow and noise may appear in the pictures of the cable TV channels over 37 (W+1).

C | Cable with a special converter (decoder)

Pay cable TV systems use scrambled or encoded signals and require special converters (decoders)* in addition to the normal cable connection. Connect the converter (decoder) with a 75-ohm coaxial cable (optional).

AUX

TO CONVERTER

VHF/UHF

Input   Output

Pay TV Cable

Special converter (decoder)

*The special converter (decoder) will be supplied by the cable company.

SPECIFICATIONS

Television system
  American TV standards
Channel coverage
  VHF: 2–13
  UHF: 14–69
  Cable TV: 1–125
Picture tube   Microblack Trinitron
  KV-25XBR: **25-inch picture measured diagonally**
    26-inch picture tube measured diagonally
    114-degree deflection
  KV-20XBR: **20-inch picture measured diagonally**
    21-inch picture tube measured diagonally
    100-degree deflection
Antenna   75-ohm external antenna terminal for VHF/UHF/CATV
Inputs   VIDEO 1, 3 INPUT (phono jacks)
    Video: 1 V p-p, 75 ohms unbalanced, sync negative
    Audio: 408mVrms (100% modulation, 47 kilohms)
  VIDEO 2 IN AV (AV jack)
    Video: 1 Vp-p, 75 ohms unbalanced, sync negative
    Audio: 408mVrms (100% modulation, 47 kilohms)
  RGB MULTI INPUT (See next page.)
  CONTROL IN (minijack)
    5V p-p
  75-ohm external antenna terminal for VHF/UHF/CATV
  AUX 75-ohm auxiliary antenna terminal
  FROM TV STAND connector (only on the KV-25XBR) for the optional SU-171 TV stand
Outputs   TV OUT (AV jack)
    Video: 1 Vp-p, 75 ohms unbalanced, sync negative
    Audio: 408mVrms (100% modulation, 5 kilohms)
  MONITOR OUTPUT (phono jack)
    Video: 1 Vp-p, 75 ohms unbalanced, sync negative
    Audio: 408mVrms (100% modulation, 5 kilohms)
  CONTROL OUT (minijack)
    5V p-p
  PHONES (stereo minijack)
    Accepts 8-ohm headphones
  SPEAKER
    Accepts speakers of 8 ohms
  TO CONVERTER terminal
Power requirements
  120V AC, 60 Hz
Power consumption
  KV-25XBR: 185 W (max.)
    1.5 W (in standby condition)
  KV-20XBR: 145 W (max.)
    1.5W (in standby condition)

Dimensions   KV-25XBR:
    635 × 547 × 478 mm (25 × 21⅝ × 18⅞ inches) without speakers
    700 × 547 × 478 mm (27⅝ × 21⅝ × 18⅞ inches) including speakers
  KV-20XBR:
    502 × 439 × 467 mm (19⅞ × 17⅜ × 18⅜ inches) without speakers
    656 × 439 × 467 mm (25⅞ × 17⅜ × 18⅜ inches) including speakers
Weight   KV-25XBR: 45 kg (99 lb 4oz)
(without speakers)   KV-20XBR: 25 kg (55 lb 2oz)

Accessories supplied
    Side-mounting speakers (Weight approx. 1.5 kg each)with speaker cords
    ....1 pair
    35 cm² (5.4 in²), APM unit
    55 cm² (8.5 in²), Bass radiator unit
    Remote Commander RM-724 with 2 size AA batteries
    Antenna connector
Optional accessories
    TV stand with foot pedals SU-171 (for the KV-25XBR)
    TV stand
      SU-172 (for the KV-25XBR)
      SU-173 (for the KV-20XBR)
    Audio/Video connecting cables (See page 11)
    U/V mixer EAC-66
    RGB multi connector PX-34
    Plug adaptor PC-33
    Audio connecting cable RK-74A

RGB MULTI INPUT (34-pin plug)

Pin No.	Signal assignment
1	+5 V power supply
2	+5 V power supply
3	Audio (R) input ground
4	Ground
5	Remote control ground
6	Composite video output ground
7	Audio (L) input ground
8*, 9*, 10*	Ground
11	Ground
12*, 13*	Ground
15*	Ground
16	Ground
20	Audio (R) input
21	Mode select
23	Composite video output
24	Audio(L) input
25	Red input
26	Green input
27	Blue input
29*	Blanking input
30*	H. sync or composite sync
31*	V. sync
33	RGB/NORMAL mode select
34	Audio select
14, 17, 18, 19, 22, 28, 32	Not in use

* For No. 8 and 25, 9 and 26, 10 and 27, 12 and 29, 13 and 30, or 15 and 31 connections, use a twisted-pair lead.

Design and specifications subject to change without notice.

TROUBLESHOOTING

Disturbances in picture and sound can often be eliminated by checking the symptoms and following the suggestions listed below.

	SYMPTOM	CHECK AND ADJUST
GENERAL	Poor or no picture (screen not lit), good sound	• Adjust PICTURE. • Adjust BRIGHT with the ADJUSTMENT buttons. • Check antenna/cable connections.
	Good picture, no sound	• Press VOLUME +. • Release MUTING on the Remote Commander. • Check that the MTS button is set correctly. • Are the speakers connected firmly? • Is the VIDEO 3/EXT-AUDIO selector set correctly?
	No picture (screen not lit), no sound	• Is POWER switched on? Power in outlet? • Check that the TV/VIDEO and/or RGB button is set correctly.
	No color	• Is it a color program? • Is the color adjustment correctly made with the SELECT and −/(L) or +/(R) buttons?
	Snow and noise only	• Is it an active or the correct channel? • Check the CABLE ON/OFF selector setting. • Check that the ANT/AUX button is set correctly. • Check antenna connections.
	Dotted lines or stripes	This is often caused by local interference. (ex. cars, neon signs, hairdryers etc.) Adjust antenna for minimum interference.
	Double images or ghosts	Reflections from nearby mountains or buildings often cause this problem. A highly directional outdoor antenna or CATV cable may improve the picture.
	Try another channel. It could be station trouble.	

	SYMPTOM	CHECK AND ADJUST
CONNECTED EQUIPMENT	No picture and/or sound for the connected equipment	• Check that the TV/VIDEO button is set correctly. • Check that the RGB button is set correctly. • Are the connections made firmly? • Check that the VIDEO 3/EXT-AUDIO selector is set correctly. • Is the power of the connected equipment turned on? • Is the connected equipment set correctly?

If the problem still cannot be solved, contact your nearest service facility.